CLAIMS

What is claimed is:

1. A method of expandable network slot addressing to provide topological information for a network, comprising:

providing a platform having addressable slots for data communication;

providing a first tier device in at least one of the slots;

connecting at least one second tier device to the first tier device;

assigning an extendable address to each of the first and second tier devices, each address including a slot address segment which indicates which slot each of the devices resides in or is connected to at the modular platform, a depth segment which indicates which layer in the topology the device is located in and a number of address bytes that are present, and an address byte segment which indicates where in the topology the device is located and provides each of the devices with a unique address so that each of the devices attached to the platform can be addressed and its topological position can be inferred from the address.

2. The method of claim 1, further comprising:

defining the extendable address as a series of bytes.

3. The method of claim 2, further comprising:

representing the extendable address as <address><depth><address byte 1> ... <address byte n>, where n is equal to a depth value.

4. The method of claim 1, further comprising assigning each address based on a location of each of the devices between an addressor and an addressee device.

5. The method of claim 1, wherein the address enumeration of each of the attached devices begins with a lowest numbered port.

6. The method of claim 1, wherein the address enumeration of a multi-sided device always begins with side A or 1, and a non-multi-sided device is always enumerated as 1.

7. The method of claim 6, wherein subsequent sides of a multi-sided device are enumerated in order starting with 2.

8. The method of claim 1, wherein the address assigned to a device is dependent upon a relationship between an addressor and the addressee device.

9. The method of claim 1, further comprising:

monitoring a return path to a headend platform using the expandable network slot address.

10. The method of claim 1, further comprising:

connecting additional x tier devices to the x-1 tier devices, where x>2; and

assigning each address based on a location of each of the devices relative to an addressor device.

11. The method of claim 1, wherein the modular platform is a headend modular platform of a cable-optic system.

12. A programmable controller having instructions stored therein for implementing the method of claim 1.